

Interim Recommendations for Facemask and Respirator Use to Reduce Novel Influenza A (H1N1) Virus Transmission

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This document has been updated in accordance with the [CDC Recommendations for the Amount of Time Persons with Influenza-Like Illness Should be Away from Others](http://www.cdc.gov/h1n1flu/guidance/exclusion.htm) (<http://www.cdc.gov/h1n1flu/guidance/exclusion.htm>) . This document provides interim guidance and will be updated as needed

This document provides updated interim guidance on the use of facemasks and respirators for decreasing the exposure to novel influenza A (H1N1) virus. This guidance replaces other CDC guidance on mask and/or respirator use that may be included in other CDC documents in regards to the outbreak of novel H1N1 virus. No change has been made to guidance on the use of facemasks and respirators for health care settings. This document includes guidance on facemask and respirator use for a wider range of settings than was included in previous documents and includes recommendations for those who are at increased risk of severe illness from infection with the novel H1N1 virus compared with those who are at lower risk of severe illness from influenza infection. For more information about human infection with novel influenza A (H1N1) virus, visit the [CDC H1N1 Flu website](http://www.cdc.gov/h1n1flu/) (<http://www.cdc.gov/h1n1flu/>) . Other CDC novel H1N1 guidance will be updated with the information contained in this document as soon as possible.

Detailed background information and recommendations regarding the use of facemasks and respirators in non-occupational community settings can be found on [PandemicFlu.gov](http://www.pandemicflu.gov) in the document [Interim Public Health Guidance for the Use of Facemasks and Respirators in Non-Occupational Community Settings during an Influenza Pandemic](http://www.pandemicflu.gov/plan/community/maskguidancecommunity.html) (<http://www.pandemicflu.gov/plan/community/maskguidancecommunity.html>) . Information on the use of facemasks and respirators in health care settings can be found at http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm (http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm) .



Information on the effectiveness of facemasks and respirators for decreasing the risk of influenza infection in community settings is extremely limited. Thus, it is difficult to assess their potential effectiveness in decreasing the risk of novel influenza A (H1N1) virus transmission in these settings. In the absence of clear scientific data, the interim recommendations below have been developed on the basis of public health judgment, the historical use of facemasks and respirators in other settings for preventing transmission of influenza and other respiratory viruses, and on current information on the spread and severity of the novel influenza A (H1N1) virus.

In areas with confirmed human cases of novel influenza A (H1N1) virus infection, the risk for infection can be reduced through a combination of actions. No single action will provide complete protection, but an approach combining the following steps can help decrease the likelihood of

transmission. These recommended actions are:

- Wash hands frequently with soap and water or use [alcohol-based hand cleaner*](http://www.cdc.gov/h1n1flu/qa.htm#antibacterial) ([h1n1flu/qa.htm#antibacterial](http://www.cdc.gov/h1n1flu/qa.htm#antibacterial)) when soap and water are not available.
- Cover your mouth and nose with a tissue when coughing or sneezing.
- Avoid touching your eyes, nose and mouth
- People who are sick with an influenza-like illness (ILI) (fever plus at least cough or sore throat and possibly other symptoms like runny nose, body aches, headaches, chills, fatigue, vomiting and diarrhea) should stay home and keep away from others as much as possible, including avoiding travel, for at least 24 hours after fever is gone except to get medical care or for other necessities. (Fever should be gone without the use of fever-reducing medicine).
- Avoid close contact (i.e. being within about 6 feet) with persons with ILI.

In addition, influenza antiviral medications are an important tool for the treatment and prevention of influenza, including novel H1N1. Also see [Guidance on the use of antiviral medications](http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm) ([recommendations.htm](http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm)) .

Facemasks and Respirators

Recommendations for the uses of facemasks and/or respirators are listed in [Table 1](#) ([#table1](#)) below for different settings where a person may be exposed to novel H1N1 virus. These recommendations also differ based on whether the person exposed to novel H1N1 is in a group at increased risk for severe illness from influenza infection. More information on preventing influenza transmission in health care settings can be found in the [Interim Guidance for Infection Control for Care of Patients with Confirmed or Suspected Novel Influenza A \(H1N1\) Virus Infection in a Healthcare Setting](#) (http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm) .

In community and home settings, the use of facemasks and respirators generally are not recommended. However, for certain circumstances as described in [Table 1](#) ([#table1](#)) , a facemask or respirator may be considered, specifically for persons at increased risk of severe illness from influenza.

Use of N95 respirators or facemasks generally is not recommended for workers in non-healthcare occupational settings for general work activities. For specific work activities that involve contact with people who have ILI, such as escorting a person with ILI, interviewing a person with ILI, providing assistance to an individual with ILI, the following are recommended:

- workers should try to maintain a distance of 6 feet or more from the person with ILI;
- workers should keep their interactions with ill persons as brief as possible;
- the ill person should be asked to follow good cough etiquette and hand hygiene and to wear a facemask, if able, and one is available;
- workers at increased risk of severe illness from influenza infection (*see footnote 3 of [table 1](#) (#table1)*) should avoid people with ILI (possibly by temporary reassignment); and,
- where workers cannot avoid close contact with persons with ILI, some workers may choose to wear a facemask or N95 respirator on a voluntary basis.

In the occupational healthcare setting, respiratory protection is recommended. Because infection control precautions, including respiratory

protection, are imperfect, workers who are at increased risk of severe illness from influenza, and who are caring for a patient with known, probable, or suspected novel H1N1 or ILI, may consider temporary reassignment to avoid exposure.

Additional recommendations for use of facemasks by people who have ILI that may be due to novel H1N1 infection are included in [Table 2 \(#table2\)](#).

There are important differences between facemasks and respirators. Facemasks do not seal tightly to the face and are used to block large droplets from coming into contact with the wearer’s mouth or nose. Most respirators (e.g. N95) are designed to seal tightly to the wearer’s face and filter out very small particles that can be breathed in by the user. For both facemasks and respirators, however, limited data is available on their effectiveness in preventing transmission of H1N1 (or seasonal influenza) in various settings. However, the use of a facemask or respirator is likely to be of most benefit if used as early as possible when exposed to an ill person and when the facemask or respirator is used consistently. (Ref. 1. MacIntyre CR, et al. EID 2009;15:233-41. 2. Cowling BJ, et al. Non-pharmaceutical interventions to prevent household transmission of influenza. The 8th Asia Pacific Congress of Medical Virology, Hong Kong, 26-28 February 2009.)

Facemasks: Unless otherwise specified, the term “facemasks” refers to disposable facemasks cleared by the U.S. Food and Drug Administration (FDA) for use as medical devices. This includes facemasks labeled as surgical, dental, medical procedure, isolation, or laser masks. Such facemasks have several designs. One type is affixed to the head with two ties, conforms to the face with the aid of a flexible adjustment for the nose bridge, and may be flat/pleated or duck-billed in shape. Another type of facemask is pre-molded, adheres to the head with a single elastic band, and has a flexible adjustment for the nose bridge. A third type is flat/pleated and affixes to the head with ear loops. Facemasks cleared by the FDA for use as medical devices have been determined to have specific levels of protection from penetration of blood and body fluids. Facemasks help stop droplets from being spread by the person wearing them. They also keep splashes or sprays from reaching the mouth and nose of the person wearing the facemask. They are not designed to protect against breathing in very small particle aerosols that may contain viruses. Facemasks should be used once and then thrown away in the trash.

Respirators: Unless otherwise specified, "respirator" refers to an N95 or higher filtering face piece respirator certified by the CDC/National Institute for Occupational Safety and Health (NIOSH). A respirator is designed to protect the person wearing the respirator against breathing in very small particle aerosols that may contain viruses. A respirator that fits snugly on the face can filter out virus-containing small particle aerosols that can be generated by an infected person, but compared with a facemask it is harder to breathe through a respirator for long periods of time. Respirators are not recommended for children or people who have facial hair.

Where respirators are used in a non-occupational setting, fit testing, medical evaluation and training are recommended for optimal effectiveness.

When respiratory protection is required in an occupational setting, respirators must be used in the context of a comprehensive respiratory protection program as required under OSHA’s Respiratory Protection standard (29 CFR 1910.134). This includes fit testing, medical evaluation and training of the worker. When required in the occupational setting, tight-fitting respirators cannot be used by people with facial hair that interferes with the face seal.

When respirators are used on a voluntary basis in an occupational setting, requirements for voluntary use of respirators in work sites can be found on the [OSHA website \(http://www.osha.gov/SLTC/etools/respiratory/voluntaryuses.html\)](http://www.osha.gov/SLTC/etools/respiratory/voluntaryuses.html).

Employers should continue to evaluate workplace hazards related to the novel H1N1 influenza A situation in accordance with CDC and OSHA guidance. Mandatory use of respiratory protection may be required when work activities in occupational settings confer risk that is task/function based, and risk analyses conducted by the employer could identify hazardous work activities. For example, performing activities which generate large amounts of aerosols require respiratory protection regardless of the setting in which it is performed (i.e. in a hospital, an outpatient setting, a prison).

For additional information on facemasks and respirators, see the [CDC/NIOSH website \(http://www.cdc.gov/niosh/npptl/topics/respirators/\)](http://www.cdc.gov/niosh/npptl/topics/respirators/), the [Food and Drug Administration website \(http://www.fda.gov/cdrh/ppe/masksrespirators.html\)](http://www.fda.gov/cdrh/ppe/masksrespirators.html), and the [Occupational Safety and Health Administration website \(https://www.osha.gov/Publications/respirators-vs-surgicalmasks-factsheet.html\)](https://www.osha.gov/Publications/respirators-vs-surgicalmasks-factsheet.html).

Groups at Higher Risk for Severe Illness from Novel Influenza A (H1N1) Infection

Groups of people at higher risk for severe illness from novel influenza A (H1N1) infection are thought to be the same as those people at higher risk for severe illness from seasonal influenza. These groups include:

- Children younger than 5 years old
- Persons aged 65 years or older
- Children and adolescents (younger than 18 years) who are receiving long-term aspirin therapy and who might be at risk for experiencing Reye syndrome after influenza virus infection
- Pregnant women
- Adults and children who have asthma, chronic pulmonary, cardiovascular, hepatic, hematological, neurologic, neuromuscular, or metabolic disorders such as diabetes;
- Adults and children who have immunosuppression (including immunosuppression caused by medications or by HIV)
- Residents of nursing homes and other chronic-care facilities.

Table 1. CDC Interim Recommendations for Facemask and Respirator Use for Home, Community, and Occupational Settings for Non-III Persons to Prevent Infection with Novel H1N1 ^{1 (#footnote1)} ^{2 (#footnote2)}

Setting	Persons not at increased risk of severe illness from influenza (Non-high risk persons)	Persons at increased risk of severe illness from influenza (High-Risk Persons) ³ (#footnote3)
Community		
No novel H1N1 in community	Facemask/respirator not recommended	Facemask/respirator not recommended
Novel H1N1 in community: not crowded setting	Facemask/respirator not recommended	Facemask/respirator not recommended
Novel H1N1 in community: crowded setting	Facemask/respirator not recommended	Avoid setting. If unavoidable, consider facemask or respirator ⁴ (#footnote4) ⁵ (#footnote5)
Home		
Caregiver to person with influenza-like illness	Facemask/respirator not recommended	Avoid being caregiver. If unavoidable, use facemask or respirator ⁴ (#footnote4) ⁵ (#footnote5)
Other household members in home	Facemask/respirator not recommended	Facemask/respirator not recommended
Occupational (non-health care)		
No novel H1N1 in community	Facemask/respirator not recommended	Facemask/respirator not recommended
Novel H1N1 in community	Facemask/respirator not recommended but could be considered under certain circumstances ⁴ (#footnote4) ⁵ (#footnote5)	Facemask/respirator not recommended but could be considered under certain circumstances ⁴ (#footnote4) ⁵ (#footnote5)
Occupational (health care) ⁶ (#footnote6)		
Caring ⁷ (#footnote7) for persons with known, probable or suspected novel H1N1 or influenza-like illness	Respirator	Consider temporary reassignment. Respirator

- 1 The effectiveness of respirators and facemasks in preventing transmission of novel H1N1 (or seasonal influenza) in various settings is not known. Use of a facemask or respirator is likely to be of most benefit if used correctly and consistently when exposed to an ill person. (Ref. a) MacIntyre CR, et al. EID 2009;15:233-41. b) Cowling BJ, et al. Non-pharmaceutical interventions to prevent household transmission of influenza. The 8th Asia Pacific Congress of Medical Virology, Hong Kong, 26-28 February 2009.)
- 2 For the purpose of this document, respirator refers to N95 or any other NIOSH-certified filtering face piece respirator.
- 3 Persons at increased risk of severe illness from influenza (i.e. high-risk persons) include those groups at higher risk for severe illness from seasonal influenza, including: children younger than 5 years old; persons aged 65 years or older; children and adolescents (younger than 18 years) who are receiving long-term aspirin therapy and who might be at risk for experiencing Reye syndrome after influenza virus infection; pregnant women; adults and children who have pulmonary, including asthma, cardiovascular, hepatic, hematological, neurologic, neuromuscular, or metabolic disorders, such as diabetes; adults and children who have immunosuppression (including immunosuppression caused by medications or by HIV); and, residents of nursing homes and other chronic-care facilities.
- 4 The optimal use of respirators requires fit testing, training and medical clearance. Proper use is recommended to maximize effectiveness. The use of facemasks may be considered as an alternative to respirators, although they are not as effective as respirators in preventing inhalation of small particles, which is one potential route of influenza transmission. There is limited evidence available to suggest that use of a respirator without fit-testing may still provide better protection than a facemask against inhalation of small particles. Respirators are not recommended for children or persons who have facial hair (see FDA website (<http://www.fda.gov/cdrh/ppe/masksrespirators.html>)).
- 5 Use of N95 respirators or facemasks generally is not recommended for workers in non-healthcare occupational settings for general work activities. For specific work activities that involve contact with people who have influenza-like illness (ILI) (fever plus at least either cough or sore throat and possibly other symptoms like runny nose, body aches, headaches, chills, fatigue, vomiting and diarrhea), such as escorting a person with ILI, interviewing a person with ILI, providing assistance to an individual with ILI, the following are recommended: a) workers should try to maintain a distance of 6 feet or more from the person with ILI; b) workers should keep their interactions with the ill person as brief as possible; c) the ill person should be asked to follow good cough etiquette and hand hygiene and to wear a facemask, if able, and one is available; d) workers at increased risk of severe illness from influenza infection (see footnote 3) should avoid people with ILI (possibly by temporary reassignment); and, e) where workers cannot avoid close contact with persons with ILI, some workers may choose to wear a facemask or N95 respirator on a voluntary basis (See footnote 1). When respirators are used on a voluntary basis in an occupational work setting, requirements for voluntary use of respirators in work sites can be found on the OSHA website (<http://www.osha.gov/SLTC/etools/respiratory/voluntaryuses.html>).
- 6 See case definitions of confirmed, probable, and suspected novel influenza A (H1N1) (casedef.htm) . Also see infection control in the health care setting (http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm) . When respiratory protection is required in an occupational setting, respirators must be used in the context of a comprehensive respiratory protection program as required under OSHA’s Respiratory Protection standard (29 CFR 1910.134). This includes fit testing, medical evaluation and training of the worker.
- 7 “Caring” includes all activities that bring a worker into proximity to a patient with known, probable, or suspected novel H1N1 or ILI, including both providing direct medical care and support activities like delivering a meal tray or cleaning a patient’s room.

Table 2. CDC Interim Recommendations For Facemask Use For Persons Ill With Confirmed, Probable, Or Suspected Novel Influenza A (H1N1)¹ (#footnote2.1) To Prevent Transmission Of Novel H1N1 ² (#footnote2.2)

Setting	Recommendation
Home (when sharing common spaces with other household members)	Facemask preferred, if available and tolerable, or tissue to cover cough/sneeze
Health care settings (when outside of patient room)	Facemask, if tolerable
Non-health care setting	Facemask preferred, if available and tolerable, or tissue to cover cough/sneeze
Breastfeeding	Facemask preferred, if available and tolerable, or tissue to cover cough/sneeze

- 1 See definitions for confirmed, probable, and suspect novel influenza A (H1N1) infection (casedef.htm) . Also see information on infection control in health care settings (guidelines_infection_control.htm) .
- 2 Ill persons should be placed in well ventilated areas when possible and placed in areas where at least 6 feet distance can be maintained between the ill person and other well and ill persons. Selected references: a) Blumenfeld HL, et al. J Clin Invest 1959;38:199-212. b) Bridges CB, et al. Clin Infect Dis 2003;37:1094-1101. c) Foster MG and Cookson AH. Lancet 1918 (Nov. 2): 588-90. d) Gregg MB. Ann NY Acad Sci 1980;353:45-53. e) WHO. Infection prevention and control of epidemic- and pandemic-prone acute respiratory diseases in health care. June 2007. f) Fabian P, et al. Plos One 2008;3:e2691.

Related Media

- CDC Podcast: General Instructions for Disposable Respirators (<http://www2a.cdc.gov/podcasts/player.asp?f=11298>)

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